

8. (Amended) The method according to claim 5, wherein said heating an ion source material comprises heating said indium iodide (InI) at a temperature of not lower than 250°C and not higher than 380°C, to generate said vapor of said indium iodide (InI).--

REMARKS

Formal Drawings

Applicants respectfully request review of the formal drawings submitted as part of the filed application April 27, 2002. The Office Action dated January 16, 2002 (Paper No. 6), included an attachment indicating the drawings have not been reviewed because, "The drawings submitted with this application were declared informal by the applicant." However, the record contains no such declaration. The cover sheet filed with the original application clearly indicates under item number 3: "Drawings - 5 sheets of formal drawings containing 12 figures." Review of the formal drawings is respectfully requested.

Amendment

Applicants have amended the specification to more accurately describe embodiments consistent with the invention. Applicants have also canceled claims 2, 3, 6, and 7 without prejudice or disclaimer of the subject matter contained therein. In addition, Applicants have amended claims 1, 4, 5, and 8 to more particularly claim the invention and to correct typographical errors. No new matter has been added. Upon entry of this amendment, claims 1, 4, 5, 8, and 9-20 will remain pending, with claims 9-20 withdrawn from consideration.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

Rejection under § 112 ¶ 2

In the Office Action the Examiner rejected claims 1–8 under 35 U.S.C. § 112, ¶ 2 as indefinite. Specifically, the Examiner stated that “Claim 1 is indefinite for reciting the limitation ‘and I’ in line 5,” and “Claim 5 is indefinite for reciting the limitation ‘and I ions’ in line 3.” Applicants submit that claims 1 and 5 as originally filed meet the requirements of § 112, ¶ 2, because the symbol “I” for the element iodine would have been understood by a person of ordinary skill. Nevertheless, Applicants have amended claims 1 and 5 to further clarify that “I” refers to the element iodine. Applicants respectfully assert that the amended claims are definite as written and request withdrawal of the rejection.

Rejection under § 102(b)

In the Office Action, the Examiner rejected claims 1–8 under 35 U.S.C. § 102(b) as anticipated by Japanese KOKAI publication number 3-13576 (“*Isaka*”). Applicants respectfully traverse this rejection.

Claims 1 recites, *inter alia*:

A method of generating ions, comprising: heating an ion source material composed of indium iodide (InI), to generate vapor of said indium iodide (InI); and generating indium (In) ions by discharging said vapor.

Isaka appears to disclose a method for ion irradiation. The apparatus irradiates granular indium triiodine (InI₃), preferably in the temperature range of 300–500 °C. The InI₃ is decomposed by arc discharge to form indium ions. The boiling point of InI₃ is about 496 °C, therefore, InI₃ can be heated near 500 °C. Also, InI₃ includes a higher ratio of iodine than InI, which allows its use at a higher temperature. However, the

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1500 E Street, NW
Washington, DC 20005
202 408 4000
Fax 202 408 4400
www.finnegan.com

higher ration of iodine decreases the beam current of indium accompanied by iodine, and results in a deterioration in the useful life of the ion source.

Claim 1 recites, "heating an ion source material composed of indium iodide (InI)." In contrast, *Isaka* discloses irradiating granular InI₃ to form indium ions, which is clearly not the same as the above noted claim element. Accordingly, *Isaka* fails to disclose or suggest all the features recited by claim 1. Therefore, claim 1 is patentable over *Isaka*.

Applicants further submit that claims 4, 5, and 8 are also patentable over the cited reference at least due to their dependence from claim 1.

In view of the foregoing amendments and remarks, Applicants respectfully request the reconsideration, reexamination, and timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

By: 

Richard V. Burgujian
Reg. No. 31,744

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FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

APPENDIX

Specification

Please delete the paragraph on page 30, lines 7–11, and replace with the following:

Re is contained in tungsten in the above explanation, but the present invention is not limited to this. Even if any one of the [Co,] Ce, Nd, Sm, Eu, Gd, Er, Yb, Lu, Sc, Y and La is contained, the same advantage can be obtained.

Please delete the paragraph on page 34, line 23–page 35, line 3, and replace with the following:

In the above-described third embodiment, the tungsten filament has been explained by using La_2O_3 (lanthanum oxide) as the additive, but the other rare earth oxides such as Y_2O_3 (yttrium oxide) and CeO_2 (cerium oxide) can be used. Further, at least one of oxides of [Co,] Nd, Sm, Eu, Gd, Tb, Er, Yb, Lu and Sc can be also used. Moreover, the additives explained in the second embodiment can also be used together.

Claims

--1. (Amended) A method of generating ions, comprising [the steps of]:

heating an ion source material composed of [a compound of an element of desired ions to be generated and I] indium iodide (InI), to generate vapor of said [compound] indium iodide (InI); and

generating [said] indium (In) ions by discharging said vapor.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

4. (Amended) The method according to claim [3] 1, wherein [the step of] said heating an ion source material comprises [a step of] heating said indium iodide (InI) at a temperature of not lower than 250°C and not higher than 380°C, to generate said vapor of said indium iodide (InI).

5. (Amended) A method of irradiating ions, comprising [the steps of]:
generating [desired ions] indium (In) and iodine (I) ions in an ion generation method according to claim 1; and
selectively irradiating said [desired] indium (In) ions onto a substrate to be processed.

8. (Amended) The method according to claim [7] 5, wherein [the step of] said heating an ion source material comprises [a step of] heating said indium iodide (InI) at a temperature of not lower than [300] 250°C and not higher than 380°C, to generate said vapor of said indium iodide (InI).--

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 L Street, NW
Washington, DC 20005
202.400.4000
Fax 202.400.4400
www.finnegan.com